

WHAT IS CLAIMED IS:

- 1 1. A deformable mirror comprising:
 - 2 a vertical comb drive; and
 - 3 a reflective surface attached to said vertical comb drive.
- 1 2. The deformable mirror according to claim 1, further comprising
2 a spring for biasing said vertical comb drive to maintain said reflective surface
3 in an original position absent application of a voltage to said vertical comb
4 drive.
- 1 3. The deformable mirror according to claim 1, wherein said vertical
2 comb drive comprises a first array of stationary elements and a second array of
3 moving elements correspondingly interspersed with said first array, said
4 reflective surface being attached to said second array.
- 1 4. The deformable mirror according to claim 3, further comprising
2 a layer covering tops of elements of said second array.
- 1 5. The deformable mirror according to claim 4, a spring for
2 suspending said first array relative to said second array, said spring being
3 attached to said layer.
- 1 6. The deformable mirror according to claim 3, wherein said
2 stationary elements and said movable elements are circular.

1 7. The deformable mirror according to claim 3, wherein said
2 stationary elements and said movable elements are planar.

1 8. The deformable mirror according to claim 4, wherein said layer
2 is attached directly to said reflective surface.

1 9. The deformable mirror according to claim 4, further comprising
2 a post attaching said layer to said reflective surface.

1 10. The deformable mirror according to claim 9, wherein said post
2 is in a center of said reflective surface.

1 11. The deformable mirror according to claim 3, wherein voltage is
2 applied to each stationary element of said first array individually or each moving
3 element of said second array individually.

1 12. The deformable mirror according to claim 3, wherein said vertical
2 comb drive comprises an array of vertical comb actuators.

1 13. The deformable mirror according to claim 12, means for
2 individually providing voltage to each actuator of said array.

1 14. The deformable mirror according to claim 12, further comprising
2 springs for individually suspending each of said second array of each actuator
3 in said array.

1 15. The deformable mirror according to claim 14, further comprising
2 an anchor for supporting said springs.

1 16. The deformable mirror according to claim 1, wherein said vertical
2 comb drive comprises plurality of cavities and teeth interdigitally mounted with
3 said cavities, said reflective surface being attached to said teeth.

1 17. The deformable mirror according to claim 16, further comprising
2 a top layer between the teeth and the reflective surface.

1 18. The deformable mirror according to claim 16, further comprising
2 a conductor for individually connecting each tooth of said teeth to a voltage
3 source.

1 19. A method of deforming a mirror comprising:
2 attaching the mirror to a vertical comb actuator; and
3 applying a voltage to the vertical comb actuator.

1 20. The method according to claim 19, wherein said vertical comb
2 drive comprises an array of vertical comb actuators and said applying
3 individually applies voltage to said vertical comb actuators.